

From Risk to Opportunity

Climate Change and the Insurance Industry

Presented to 2007 Frankel Symposium: *Coping with Global Warming*

UCLA School of Law

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Outline

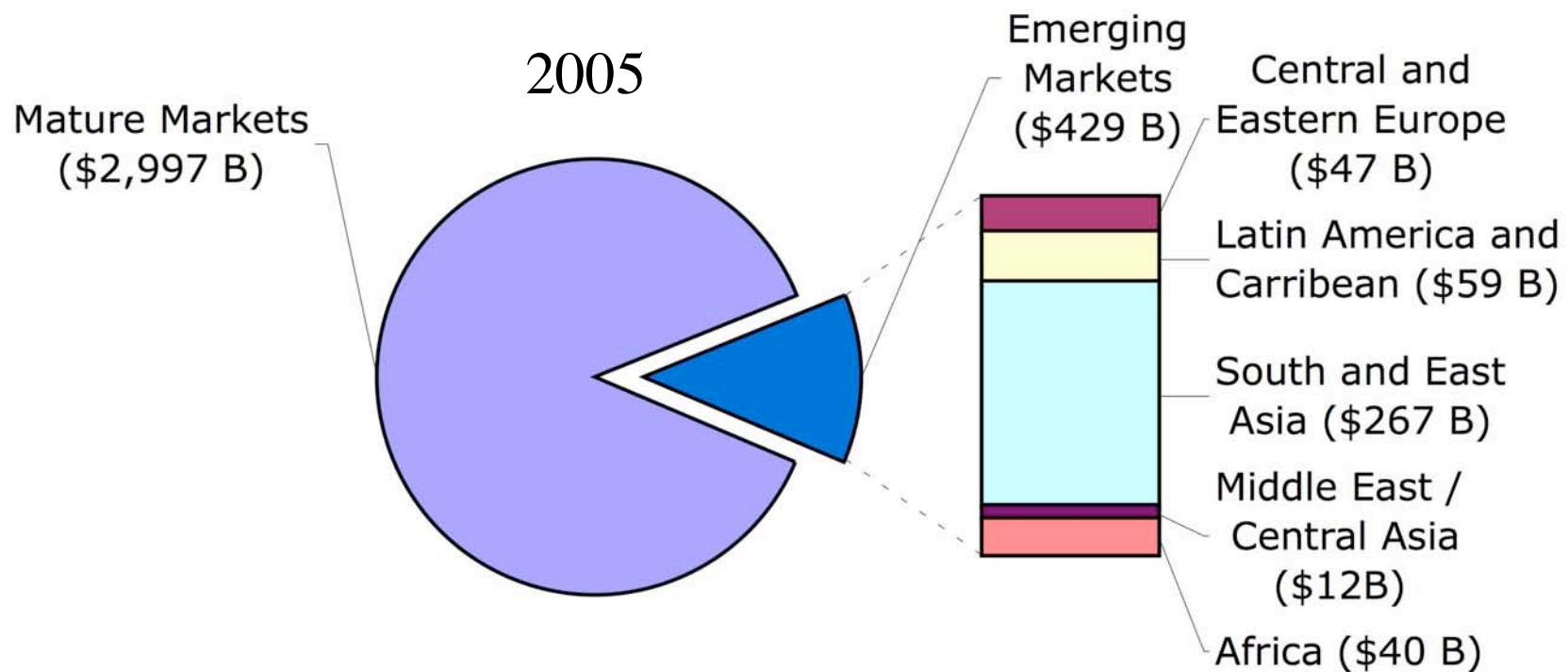
- Overview of the insurance sector
- Risks from climate change
- Risks from responses
- Opportunities

Thread:

False dichotomy of reducing emissions vs. reducing impacts

\$3.4 *trillion* world insurance market

- World's biggest industry; enormous political influence
- Most “lines” vulnerable (property, liability, life, health)
- Availability and affordability -- major public policy issues

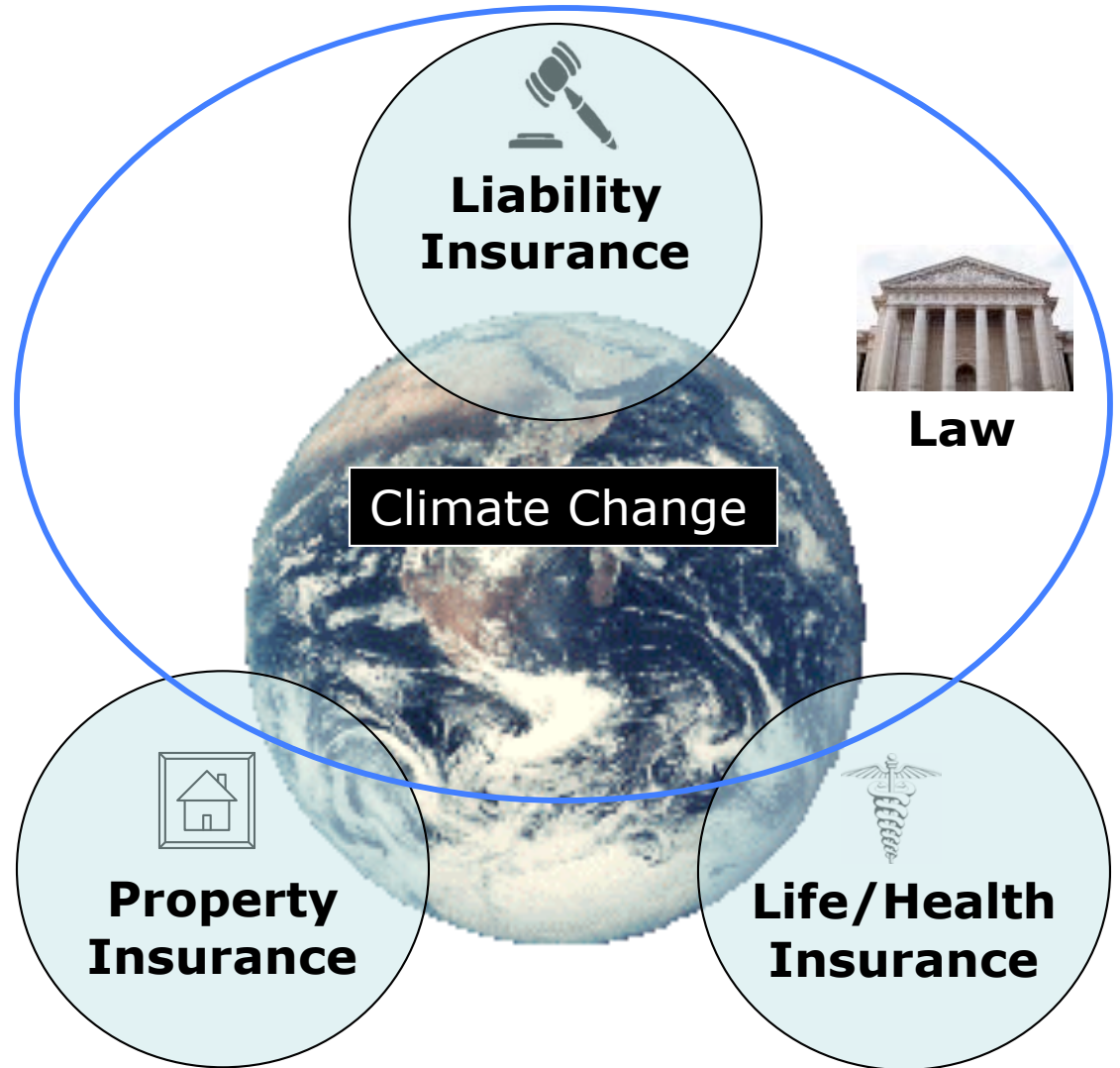


Source: Swiss Re, Sigma No. 5/2005

Climate Change: Intersection with insurance and law

Insurers are....

- integrators
- risk managers
- adaptive capacity
- vulnerable
- selective
- potential part of solution



Insurance-relevant consequences



Property Insurance

- Property damage
- Mold/moisture
- Forest products
- Agricultural losses
- Business interruption
- Roadway



Life/Health Insurance

- Injury
- Infectious diseases
- Heat stress
- Respiratory
- Pollutant releases
- Food poisoning
- Mental health
- Nutrition/water



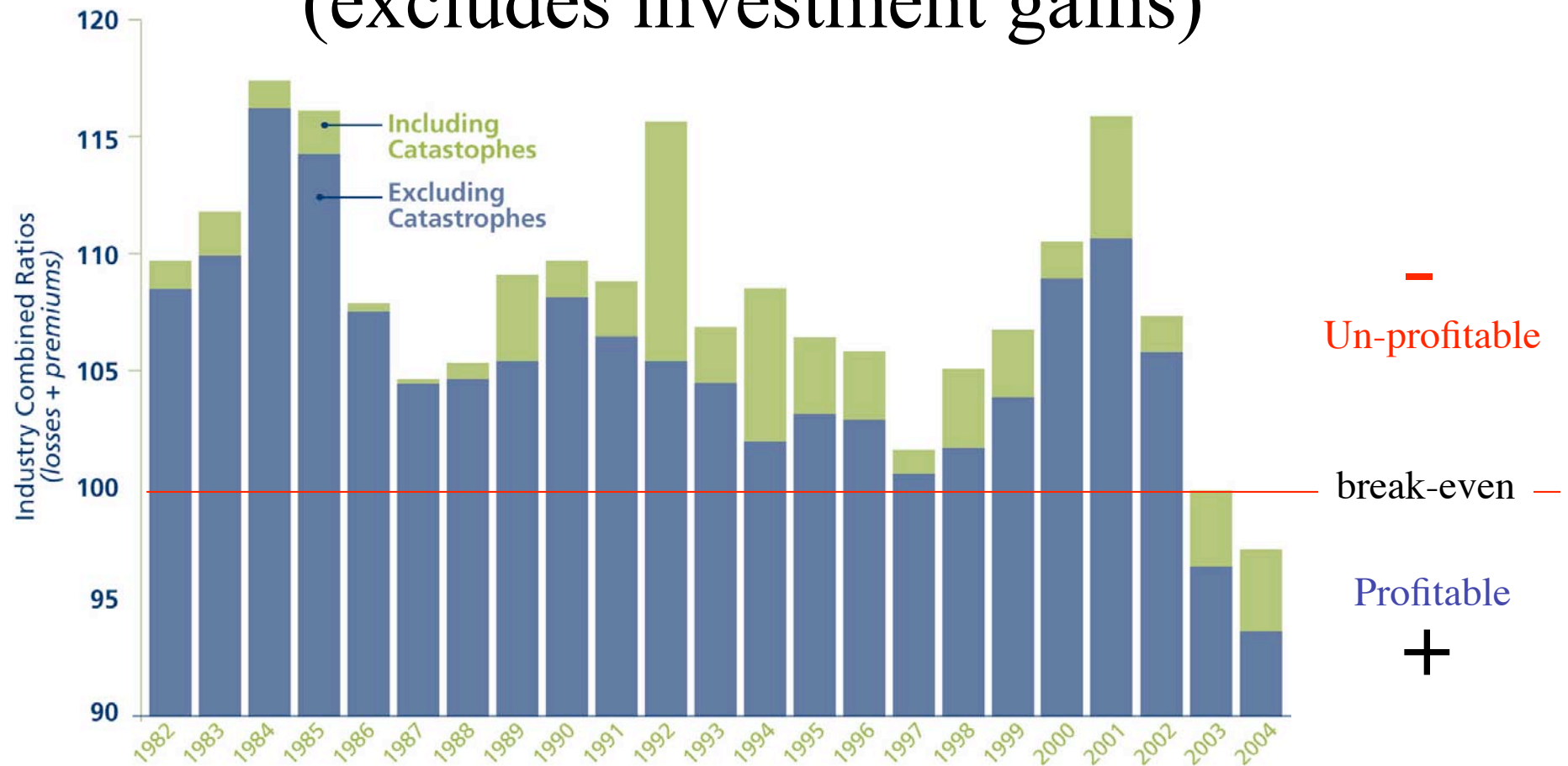
Liability Insurance

- General
- Product
- Environmental
- Professional
- Political Risk
- Roadway

“CATs” play a key role in profitability

P&C Combined Ratios: 1982-2004

(excludes investment gains)



Note: Catastrophes are not the only climate change impact of concern

Source: AM Best, Aggregates & Averages

Uncertainty: Physical ➡ Financial

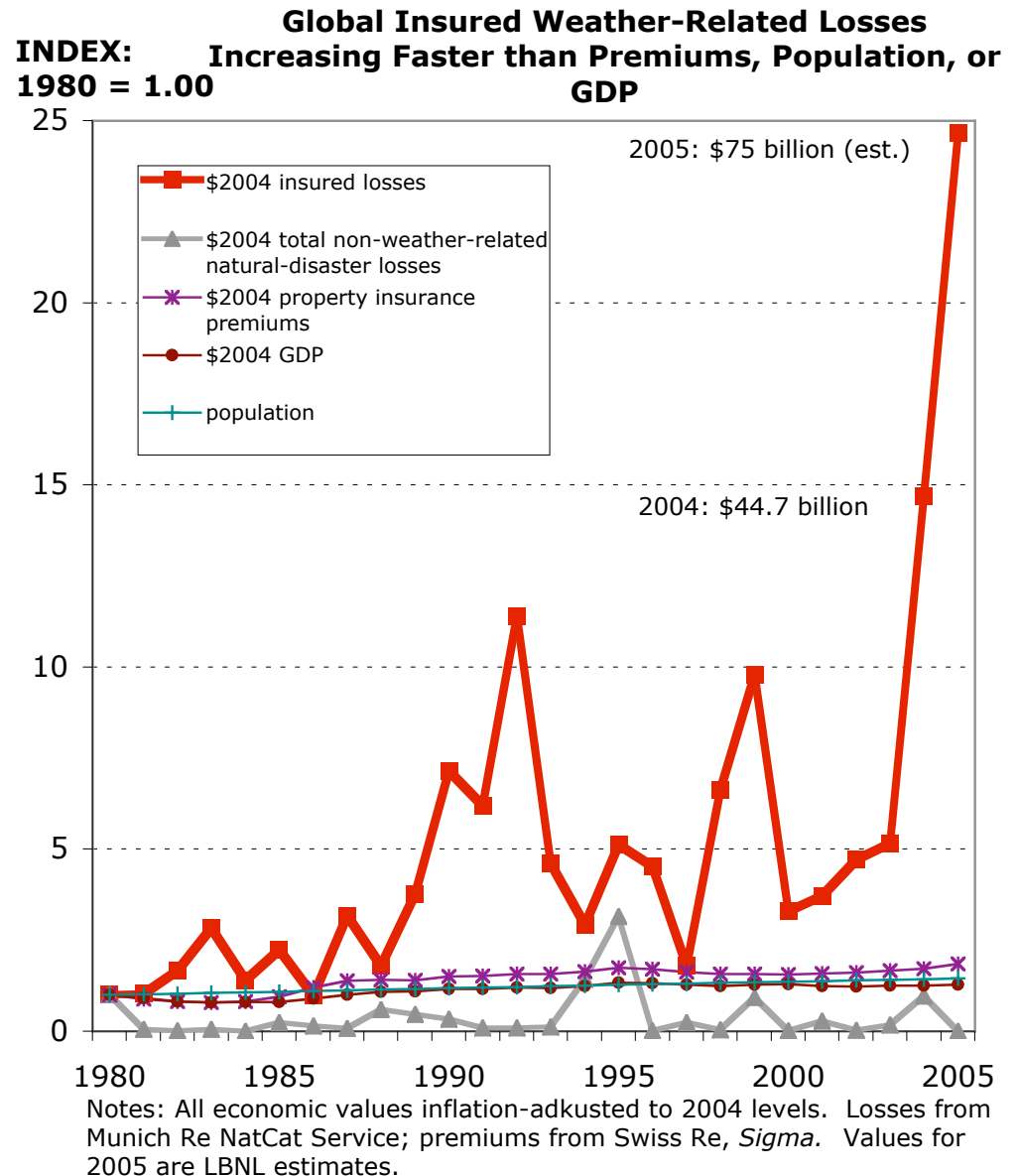
"We'd be out of our minds if we wrote weather insurance on the opinion global warming would have no effect at all."

- Warren Buffett

2006 annual shareholder meeting

Non-climate factors play a role, but...

- Trends *consistent* w/ observed change
- Why are non-weather losses level?
- Even worse without prevention efforts

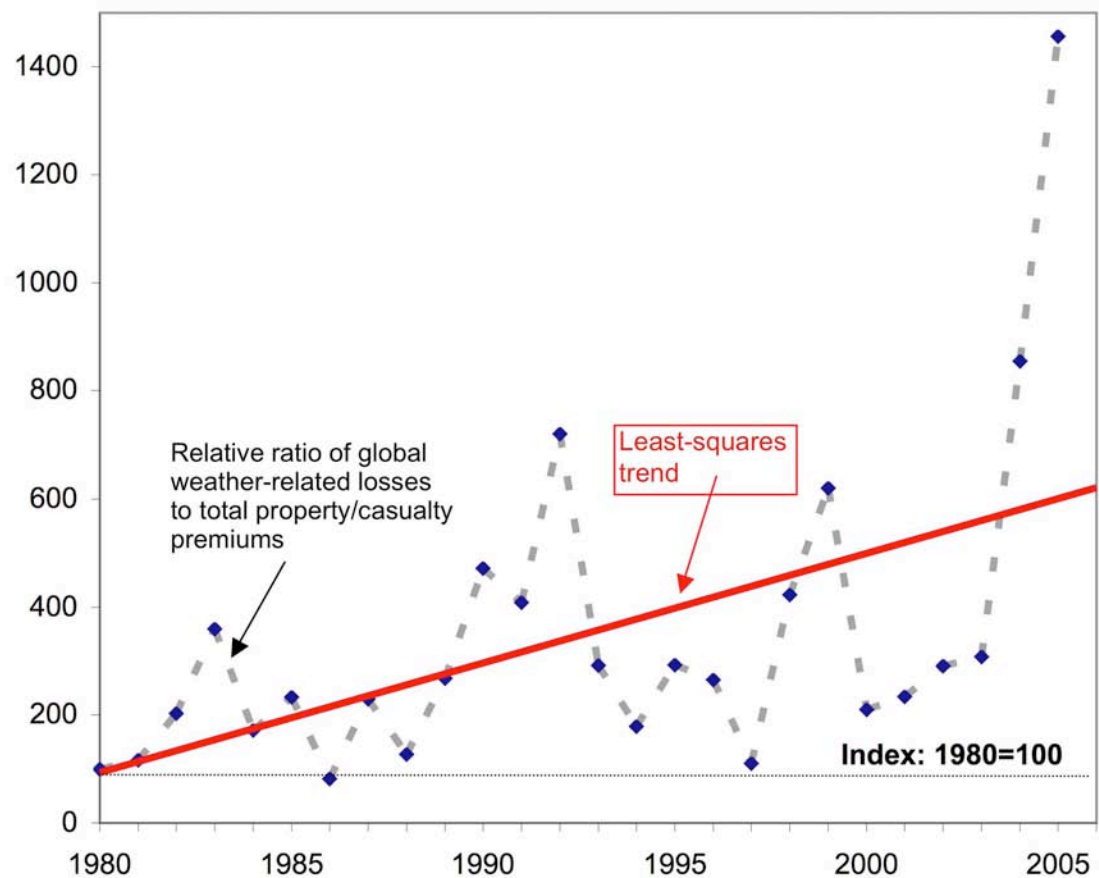


Risk is OK; Uncertainty is not

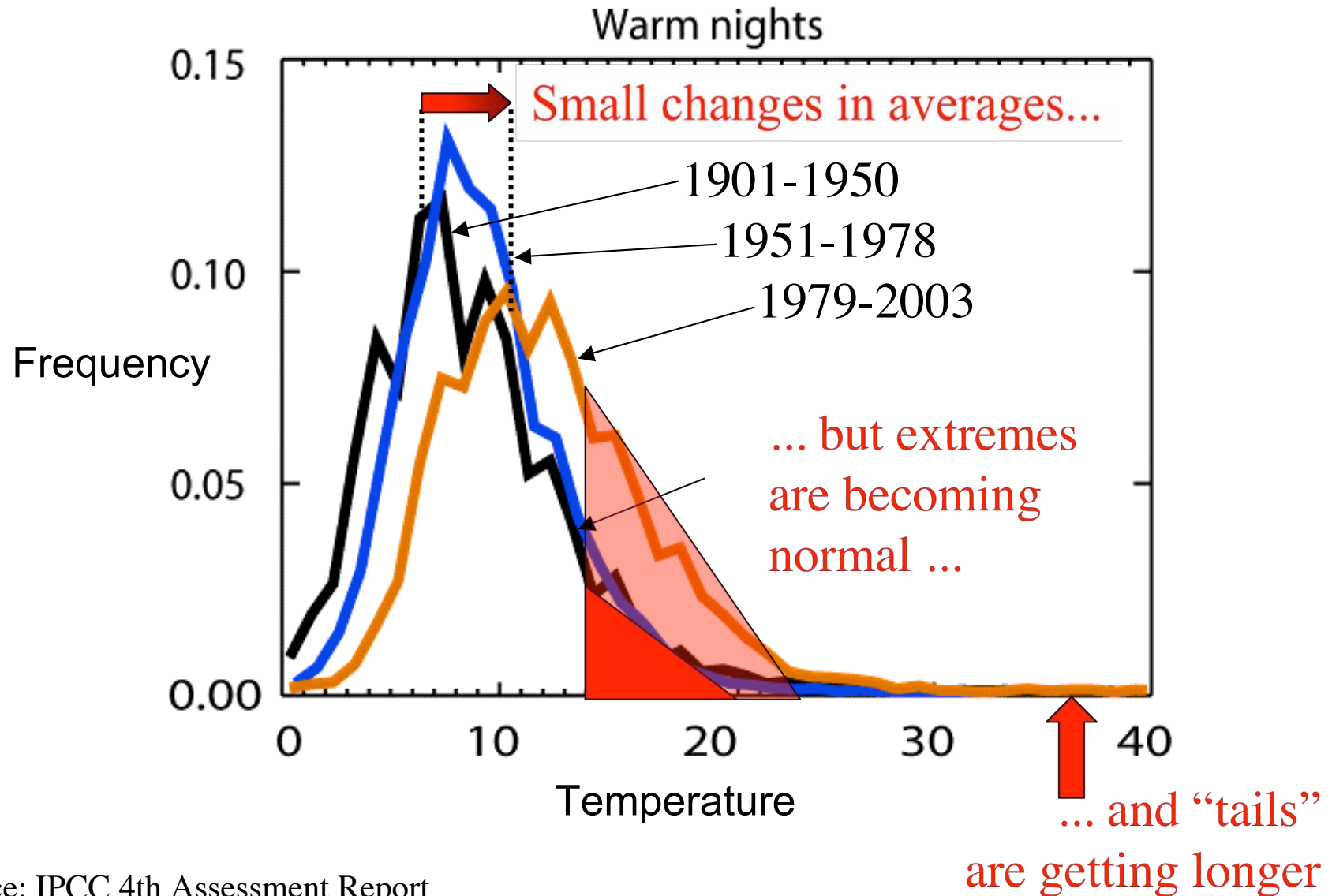
The ratio of losses to premium revenues is increasing; So is the volatility

Unknowns:

- Underwriting
- Operations
- Investments
- Shareholders
- Reputation
- Regulation
- *Insurability*



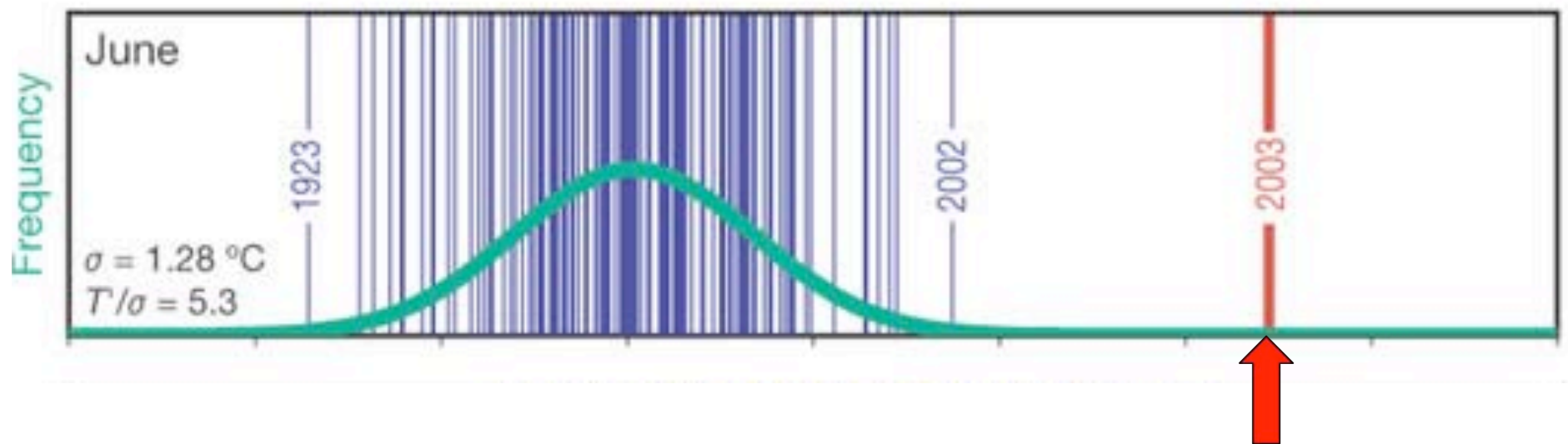
Extremes shifting *more* than averages



Source: IPCC 4th Assessment Report

Rare extremes cause most of the damages & insured losses

The European heat wave of Summer 2003



Event was “six-sigmas” outside of norm.
16°F above average in France and Germany
was a 1-in-10,000 event to 1-in-46,000 event

Risks are associated with responses to climate change



- **Impact reduction** – efforts to decrease vulnerability
 - Integrity of defenses
 - Risk of mal-adaptation
- **Emissions reduction** – supply- and demand-side energy choices
 - Green Buildings
 - Nuclear power
 - Hydrogen energy
 - Renewable energy
 - Carbon capture & storage

Carbon capture and storage (CCS)

- Lake Nyos - 1986
(Cameroon): Natural CO₂ leak suffocated 1800 people, 3500 farm animals



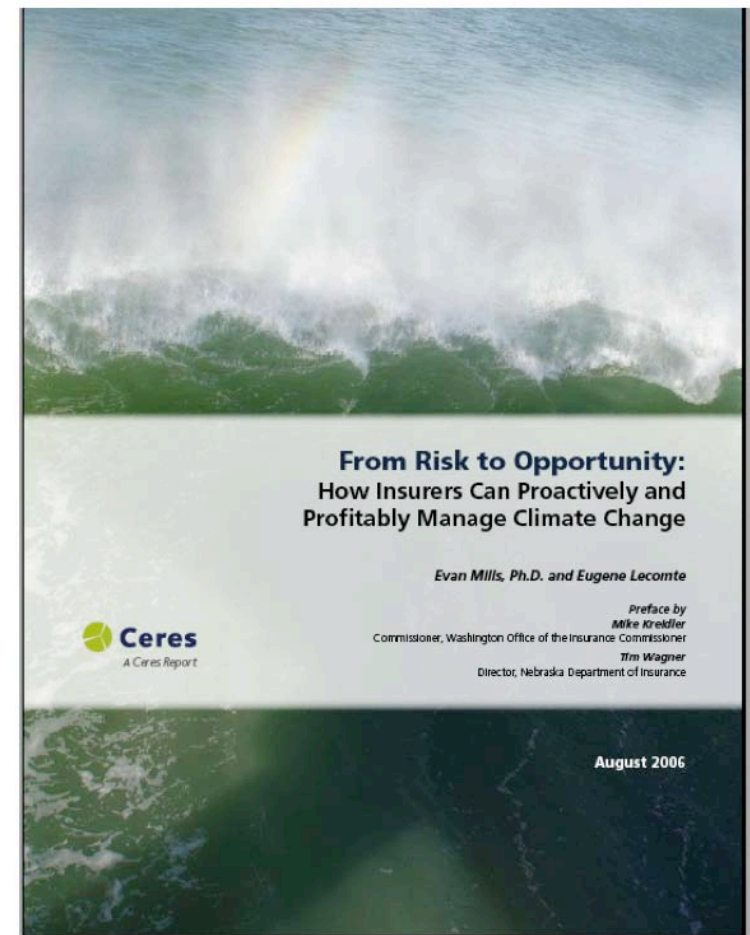
From Risk ... to Opportunity

New Report:

~220 examples; ~120 insurers
[modest beginnings]

The insurance sector has a key role to play in helping to mitigate the effects of climate change ... and by developing new products and solutions that can support emerging greenhouse-gas and renewable energy markets.

- Marsh & McLennan



Top-10 practical strategies

1. Promoting loss prevention
2. Crafting innovative insurance products
3. Providing new customer services
4. Participating in carbon markets
5. Rewarding good behavior
6. Investing in solutions
7. Conducting research
8. Participating in the public policy discussions
9. Leading by example
10. Educating each other

Promoting loss prevention

- Meets *Institute for Business and Home Safety's* “Fortified... for safer living” stds.
 - Wind-resistant rigid foam panel walls and multi-glazed windows
 - Ice-dam resistant
 - Mold resistant
 - Water-resistant insulation

BASF Home - Patterson NJ



Some insurers are giving premium credits....

Crafting innovative insurance products

- *Fireman's Fund*: first-ever “Green-Buildings Insurance”
 - Premium credits for green features
 - Rebuild to green standards after loss
- *Munich Re*: geothermal energy production insurance
- *Lloyds*: Energy Savings Insurance



Providing new customer services

Insurance Australia Group offering on-line automobile carbon-offset service for customers

Calculate your CO₂

Offset your emissions

Take our survey


Play the game

Climate Help

- Climate change
- Going carbon neutral
- What we're doing
- How you can help

FAQ

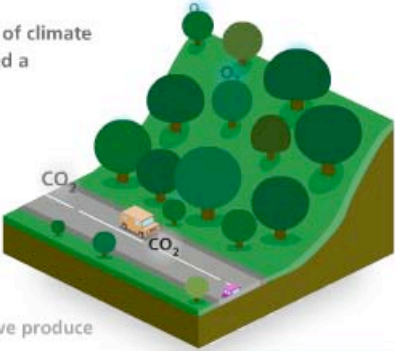
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Don't underestimate the effects of climate change.

With recent events like Hurricane Katrina, persistent droughts, and worsening bushfire seasons, there are now more signs than ever that our climate is changing.


Because cars are a significant cause of climate change, NRMA Insurance has created a new environmental program called Climate Help. It shows you how to offset your car's emissions, and how to help combat climate change with a unique method called carbon credits.



CO₂ CO₂

Forests reduce the CO₂ we produce

Next »



Climate Help

Pay for your emissions

Back to Climate Help

Paying for your emissions is one of the simplest things you can do to help the environment. And we've tried to make it even simpler by allowing you to pay online with your credit card.

It's good to know you're doing the right thing, so we can also send you a certificate confirming that your car emissions will be offset. Just check the box on the next page and we'll email it to you in PDF format.

Calculate your CO₂

Choose your car type [Need help?](#)

Small

How far do you drive each year? [Need help?](#)

Between 10,000 kms and 15,000 kms per year

Your car emits 2.1 tonnes of CO₂ emissions annually

To offset your emissions for 12 months you need to pay \$32.93*

*It costs \$15.68 to offset one tonne of CO₂

Pay for your emissions

TitleFirst nameSurname

Mr

EmailAge

18-24 years

Are you an NRMA Insurance customer?Are you an IAG staff member?

YesNoYesNo

Name on credit cardCredit card numberExpiry DateCredit Card Type

01 / 06

Please select

We do not accept AMEX or Diners Club

You are paying \$32.93

Next »

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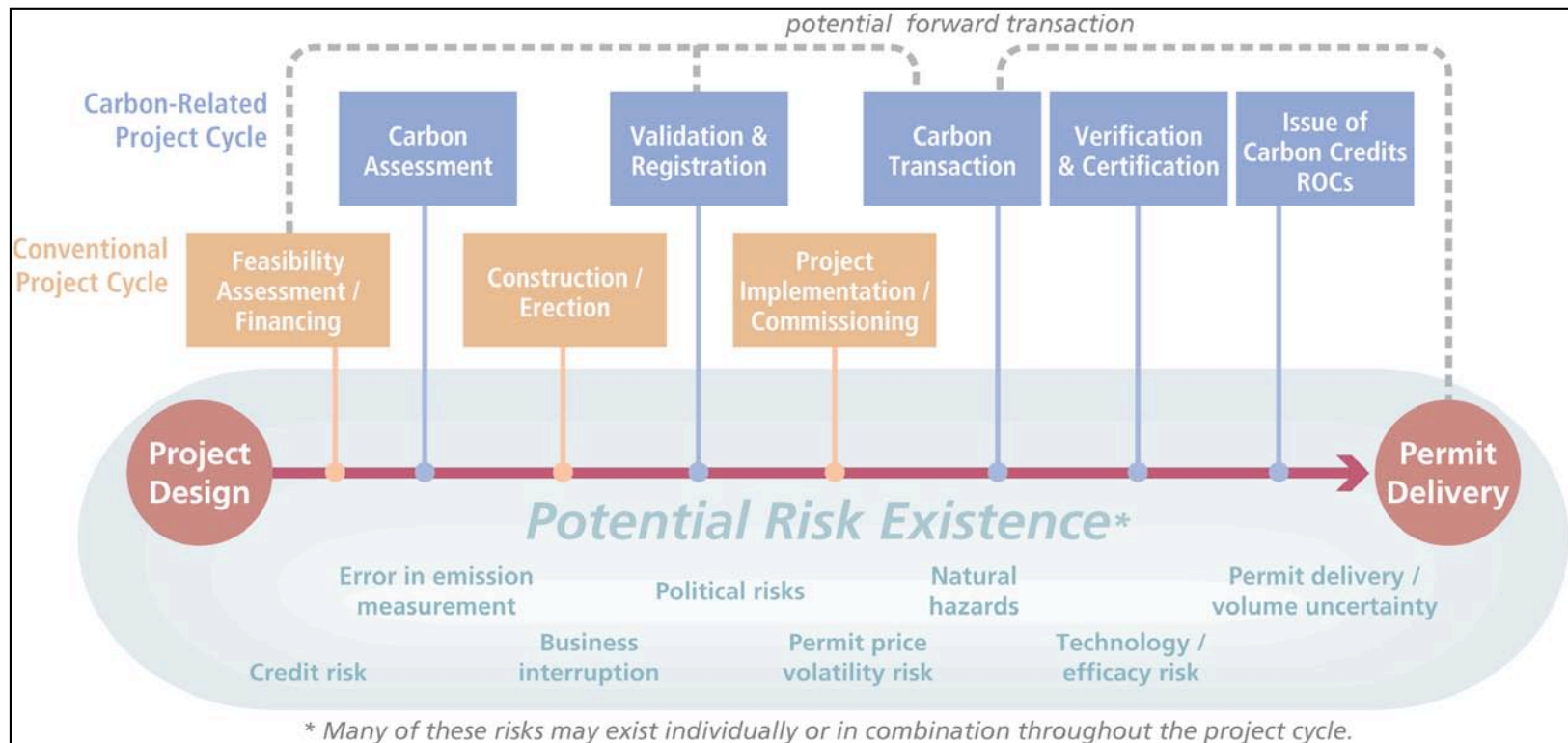
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Source: <http://www.climatehelp.com.au/>

Participating in carbon markets

- *AIG, Marsh*, others offering carbon project risk-management consulting services; insurance



Source: Marsh. 2004. "Responding to Climate Change Risks and Opportunities."

Rewarding good behavior

- *Travelers* offers 10% premium discount to drivers of hybrids
- *GMAC* offers “pay-as-you-drive” insurance discounts of up to 40%



**Goes beyond fossil fuels.
And fossil insurance policies.**

It's just what the insurance world needs—more blue sky thinking. At Travelers, we're always working to identify changes in the world and to make sure your policies stay in-synch. From the discount we offer forward-thinking hybrid drivers to our monitoring of new risks, we help insurance keep up with life—whatever the road ahead may bring. Call an independent agent. After all, your world is always evolving. So should your insurance.

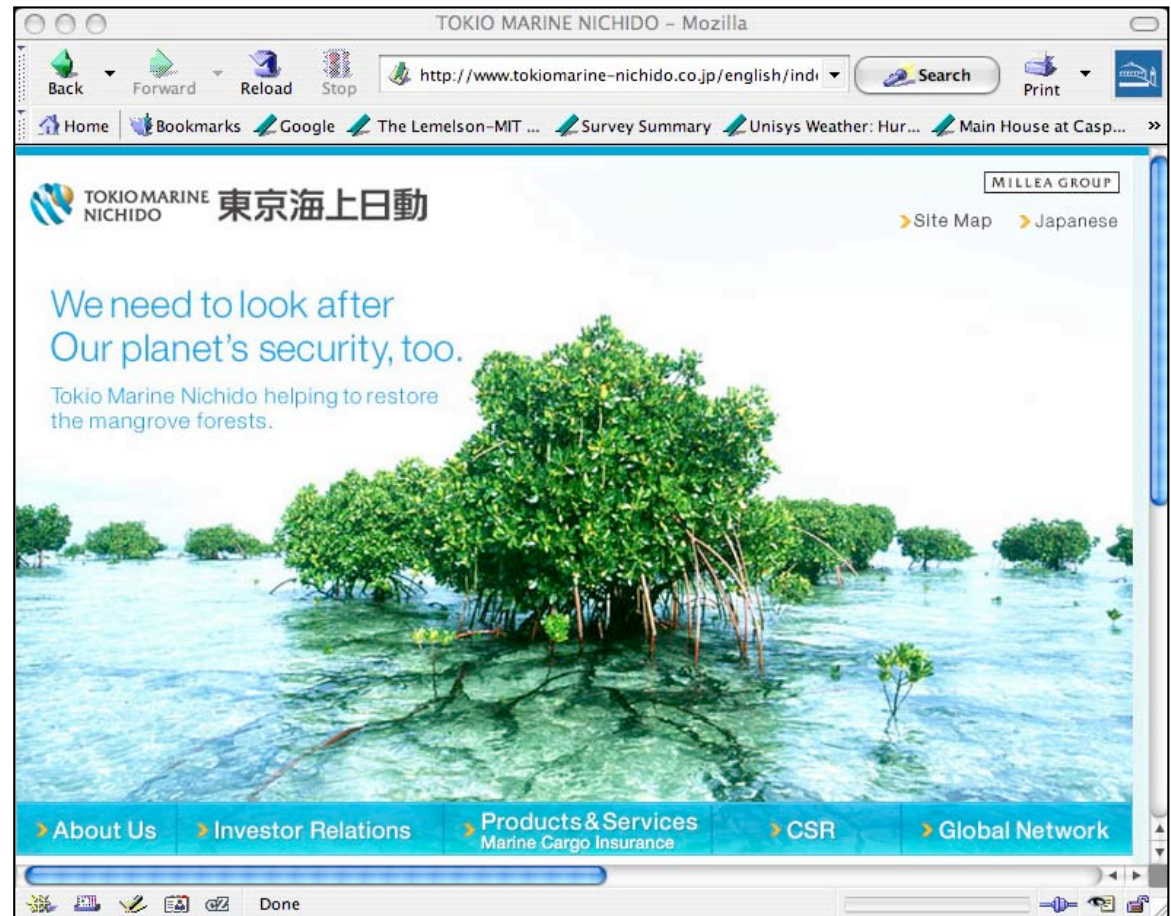
TRAVELERS
Insurance. In-synch.™

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Investing in solutions

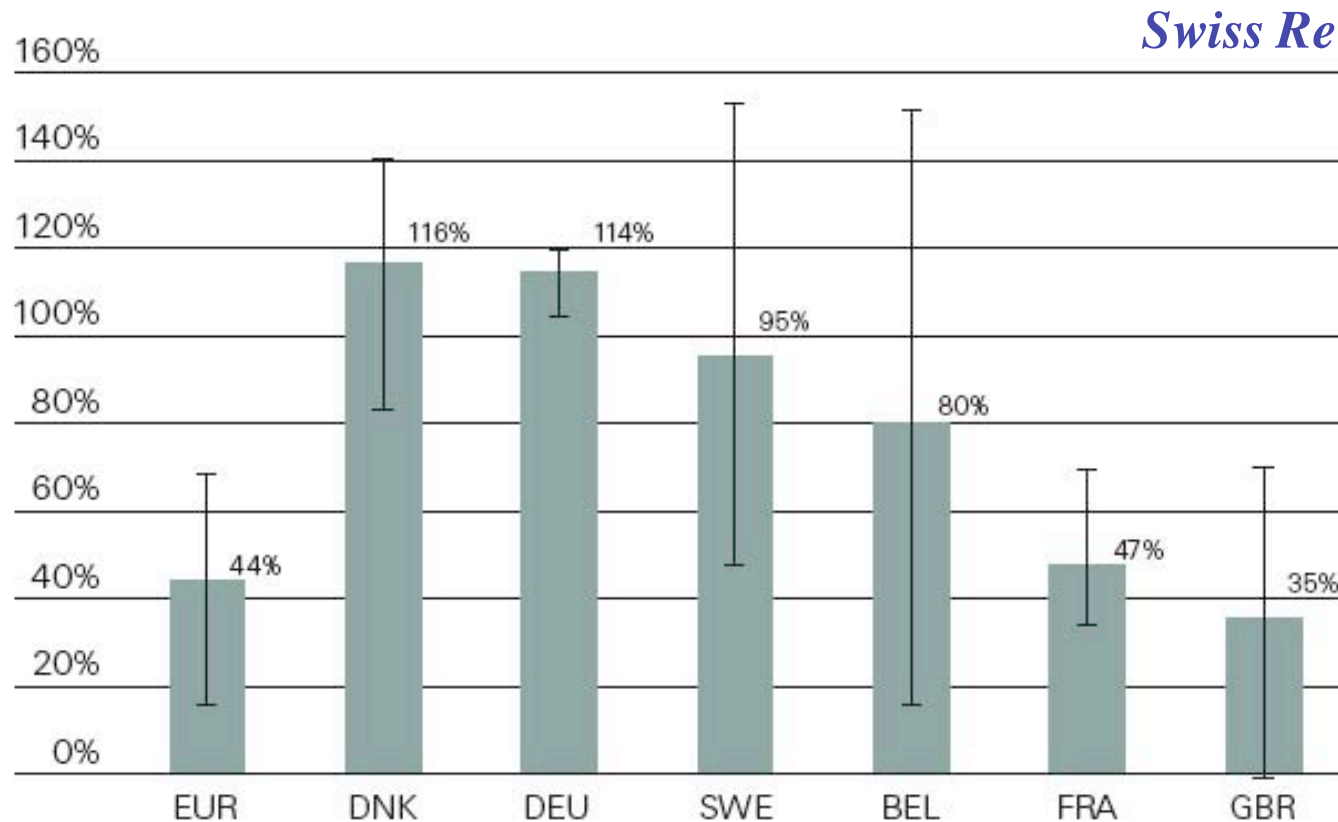
- *Tokio Marine & Nichido* has reforested 7,500 acres of mangroves in Indonesia, Thailand, Philippines, Myanmar and Vietnam. 5,000 more acres in progress



Source: <http://www.tokiomarine-nichido.co.jp/english/index.html>

Conducting research

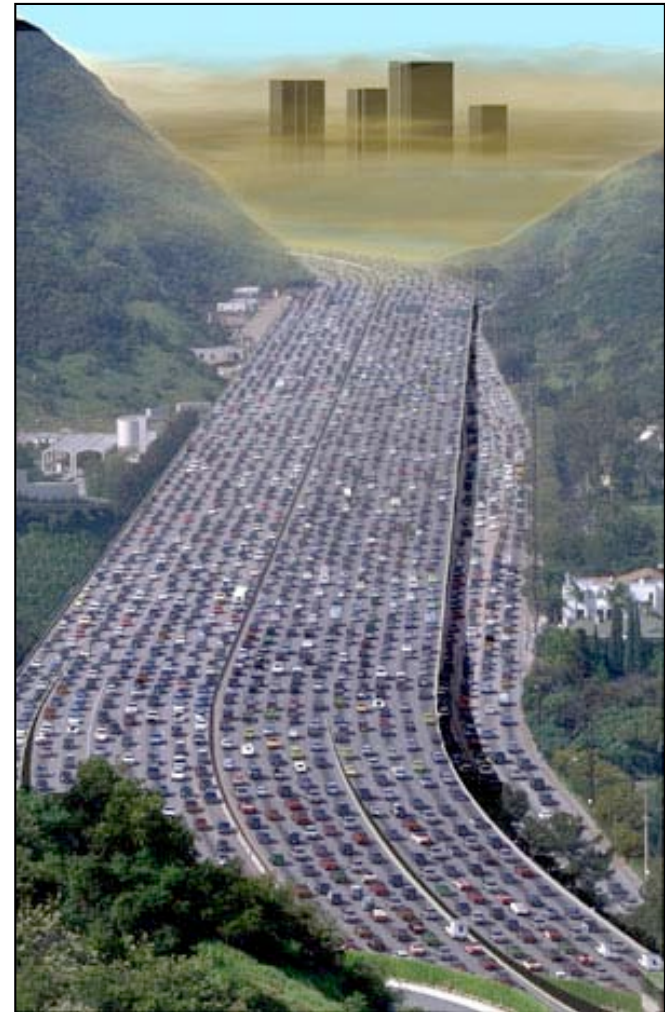
Expected increase in annual windstorm loss in Europe



Increase in annual expected loss for Europe (EUR), Denmark (DNK), Germany (DEU), Sweden (SWE), Belgium (BEL), France (FRA) and the UK (GBR) over the period 1975 to 2085 (in %). The broad bars represent the mean value of the climatic models, and the error bars show the spread of the results from all models

Participating in public policy discussions

- *American Insurance Association* - Endorsing public transportation; reduced speed limits; telecommuting based on win-win benefits to insurers
- *Association of British Insurers* advising City of London on land-use planning and flood defenses



Leading by example

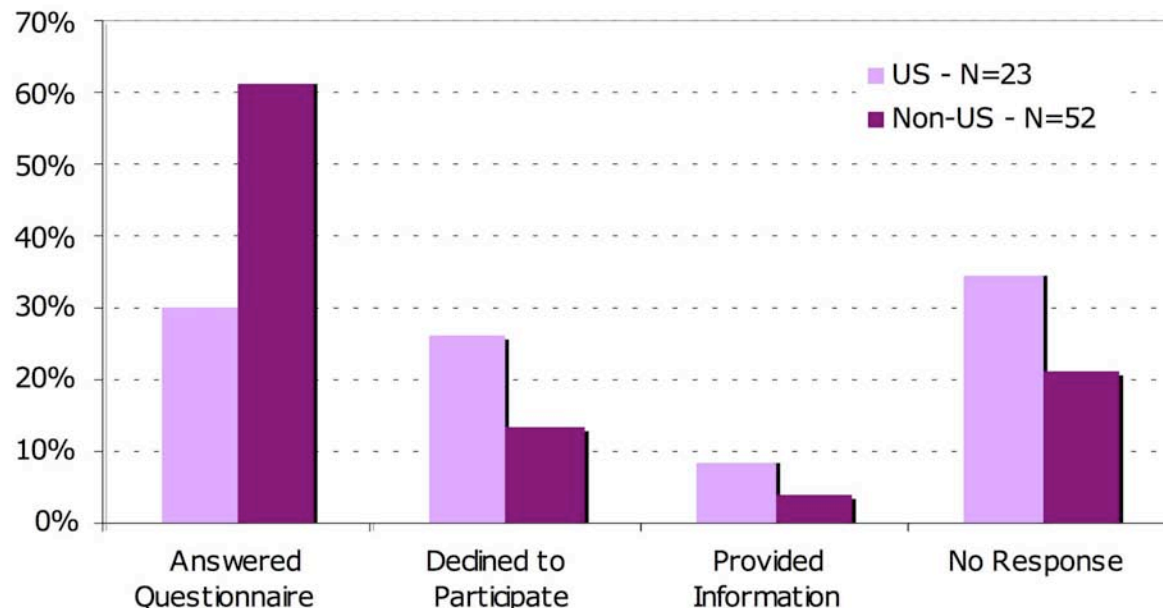
Carbon Disclosure Project

Insurers' responses: *AIG, Aon, Marsh & McLennan, MBIA, Safeco, St. Paul Travelers, Unum Provident*



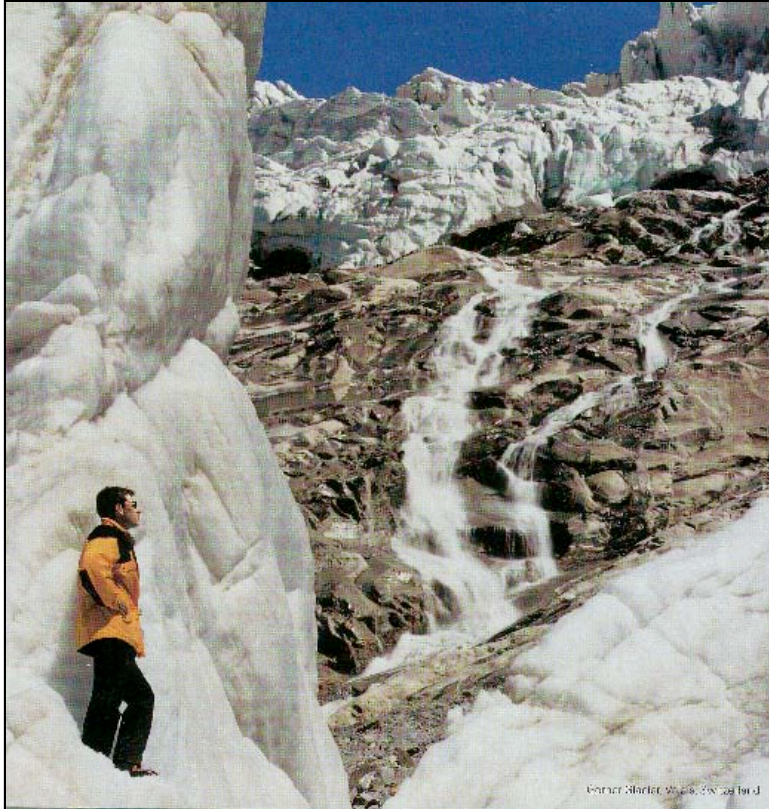
Swiss Re's “Gherkin” building (London)

- Energy efficient
- Daylighting
- Natural ventilation



Educating each other

- *Swiss Re* has run full-page ads on climate change in major insurance trade journals for several years




© Peter Glaser, W&A, Zürich

Ivo Menzinger, Sustainability Expert, Swiss Re

"Today, climate change is a fact. And change presents us with both risks and opportunities." Ivo Menzinger and his team identify environmental risks and help develop sustainable strategies to cope with them. Swiss Re was among the first to recognize the potential impact of climate change on the financial services industry and to study effective ways of managing associated risks. Combining expertise and financial strength, Swiss Re is ideally positioned to provide your company with tailored solutions to mitigate your exposure and protect your balance sheet – ensuring, in a climate of uncertainty, that you feel secure. www.swissre.com

Expertise you can build on. **Swiss Re**



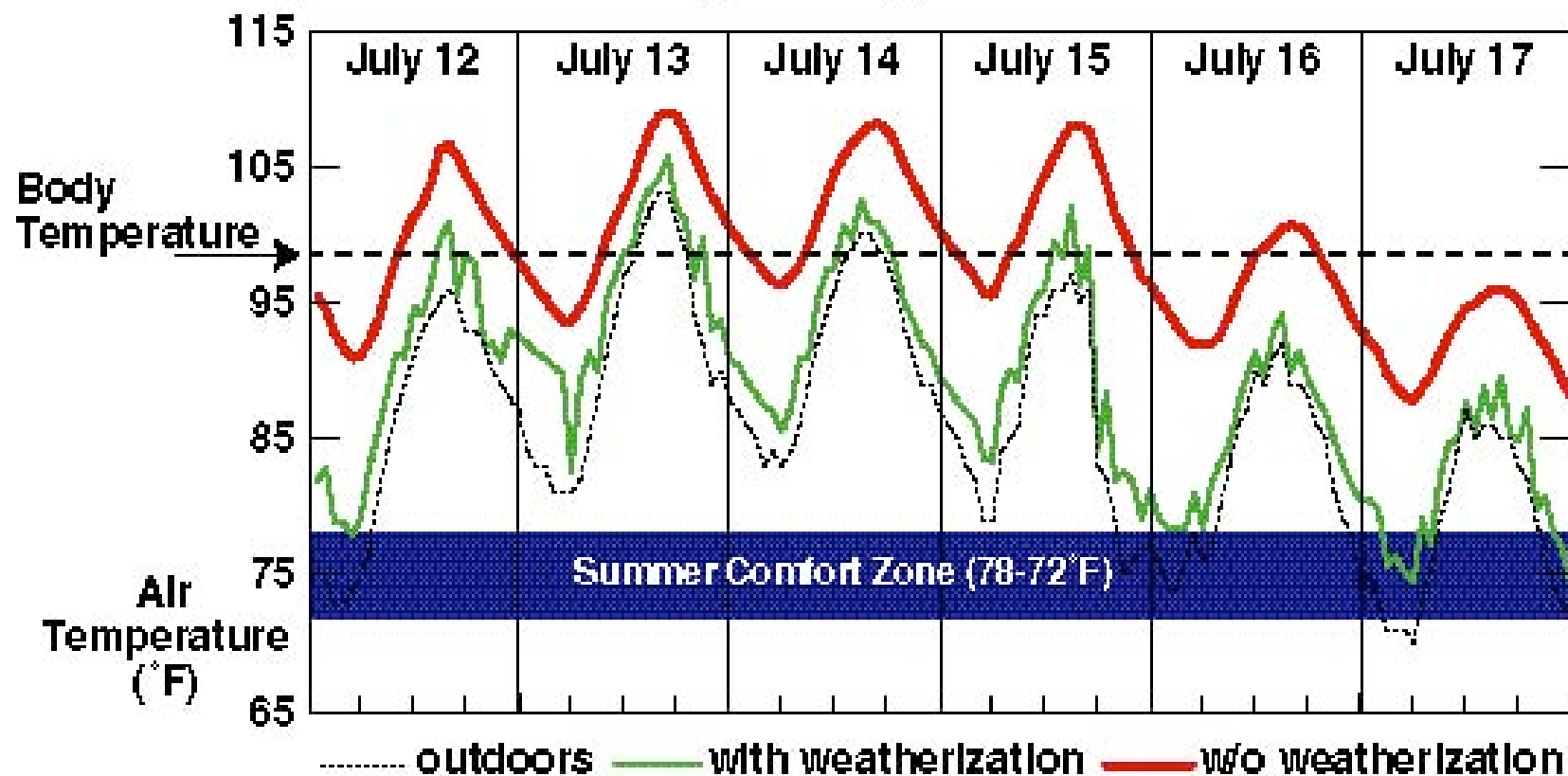
Bottom line....

- The insurance sector - *is a powerhouse*
- Risks from climate change - *are material*
- Risks from responses - *are under-appreciated*
- Opportunities - *very significant; off to good start*
- Emission vs. impact reduction: *strong synergisms*

Emission-/Impact-reduction Synergisms

Avoiding heat deaths thru energy efficiency

Performance of Weatherized and Unweatherized Apartments During Chicago Summer Heatwave in 1995



Source: Lawrence Berkeley National Laboratory

<http://insurance.lbl.gov>

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